

Falcidens poias, a new species of chaetoderm Aplacophora
from Rottnest Island, Western Australia
(Chaetodermomorpha, Chaetodermatidae)

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Contribution no. 8877 from Woods Hole Oceanographic Institution

Falcidens poias is a new aplacophoran species, the first to be described from Western Australia. It occurs amongst rhizomes of seagrass in Porpoise Bay, Rottnest Island, at densities of about 50 individuals m⁻². Its closest known relative is *F. lipuros* Scheltema from Bass Strait. The species is interesting both because of its unusually shallow occurrence at 3 m and its abundance.

Keywords: *Falcidens*, new species, Western Australia, Aplacophora

Introduction

Early records of Aplacophora off Australia were restricted to two (Thiele, 1897), but a number of species have recently been described (Scheltema, 1989, in press; Salvini-Plawen, 1992). This paper for the first time describes an aplacophoran species from Western Australia.

Class Chaetodermomorpha Pelseneer, 1906

Syn. Caudofoveata Boettger, 1956

Aplacophora lacking a ventral furrow and foot; with an oral shield and paired gills in the posterior mantle cavity; radula distichous.

Family Chaetodermatidae Marion, 1885

Radula with a single pair of denticles associated with a cone-shaped structure.

Genus *Falcidens* Salvini-Plawen, 1969

Syn. *Chaetoderma* Ivanov 1981 (non Lovén, 1844)

Paired denticles of radula sickle-shaped, attached to cone, and with accessory structures to guide radula movements.

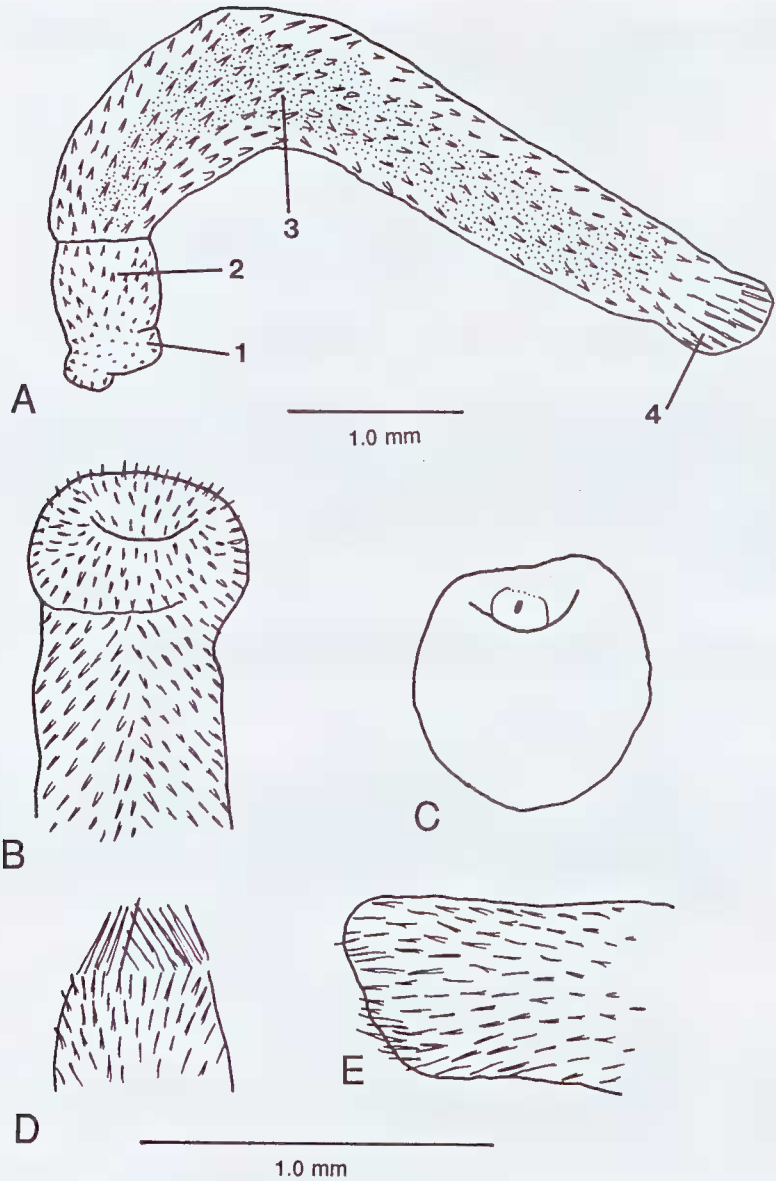


Figure 1. *Falcidens poias* n. sp. A, holotype, anterior to left; stomach and digestive gland shown in stippling. B, ventral anterior view of holotype showing diverging spicules. C, anterior end of anteriorium with oral shield, paratype; upper edge of shield and its relationship to mouth opening not clear. D, dorsal view of posterior, paratype. E, lateral view of posterior, holotype. 1, anterior; 2, neck; 3, trunk; 4, posterior.

Falcidens poias n. sp.

Type material: Holotype and paratype, Porpoise Bay, Rottneest Island, Western Australia, 3 m depth; collected 21 January 1991. Western Australia Museum nos. WAM 136-94 (holotype), WAM 137-94 (paratype).

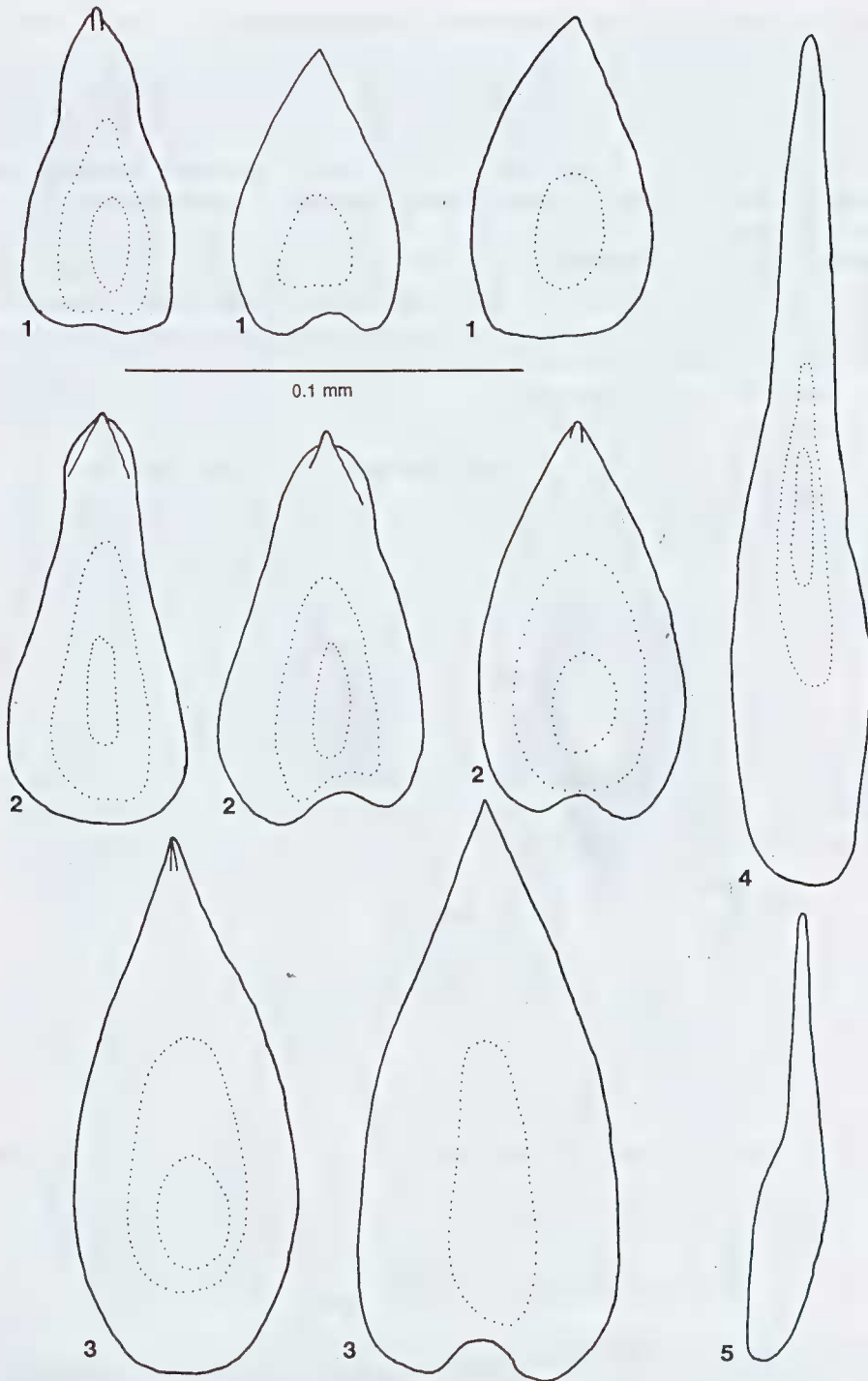


Figure 2. Spicules of *Falcidens pois* n. sp. 1, from mid-neck region; 2, from trunk adjacent to anterior constriction; 3, from trunk two-thirds of the way posterior to anterior constriction; 4, from encircling mantle cavity spicules; 5, from posterior mantle cavity wall beneath number 4 spicules. Dotted lines indicate isochromes, or lines of equal color and thickness when spicules are viewed with cross-polarized light.

Etymology: From *poias*, belonging to grass, from the habitat.

Description: A small species (Fig. 1), holotype 5.3 mm long by 0.8 mm in greatest width. Body translucent, anterium distinct, anterior constriction slight, and anterior trunk not differentiated from posterior trunk. Posterior end slanted in lateral view, tapered in dorsal view, dorsoterminal sense organ not evident. Anteriorly, trunk spicules diverge from ventral midline. Oral shield small, oval, wider (0.18 mm) than high (0.10 mm).

Spicules (Fig. 2) symmetrical except on posterior mantle cavity wall, flat, without sculpturing, rounded triangular or with a waist, with a distinct distal point, base rounded or notched. Spicules of anterium narrow rather than rounded triangular, and those of posterium with a long distal point. Greatest dimensions: neck spicules 74 μ m long, 43 μ m wide, and 6 μ m thick; thickest spicules on trunk at anterior constriction, to 7 μ m, length 115 μ m, width 52 μ m; trunk spicules from further posteriorly 146 μ m long, 65 μ m wide, and 6 μ m thick; spicules longest from around mantle cavity, 214 μ m, but narrow, 34 μ m, and 6 μ m thick.

Radula small (Fig. 3), total length 140 μ m, with relatively large denticles about 60

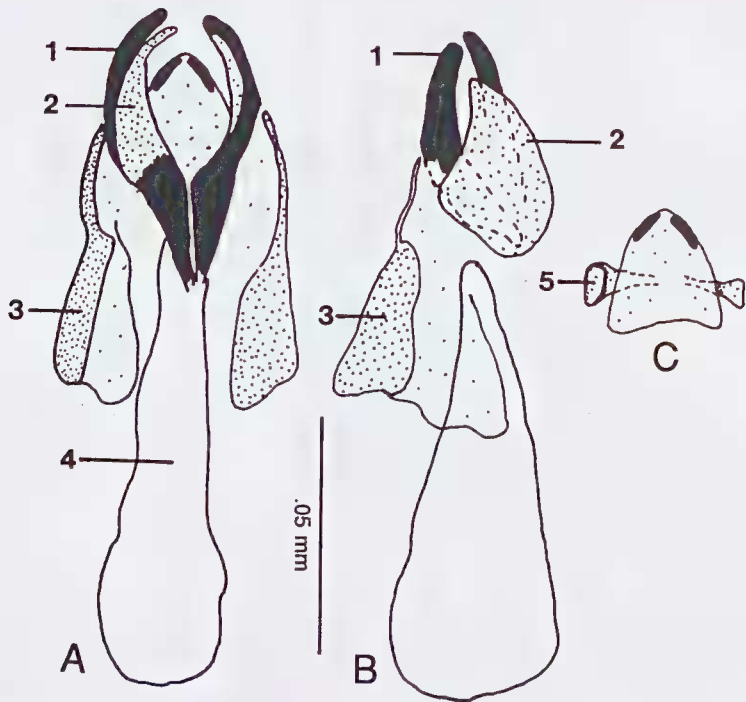


Figure 3. *Falcidens poias* n. sp. Radula of paratype. A, frontal view; B, lateral view; C, triangular back plate with tiny protuberances (black) and lateral apophyses (5) which wrap around the denticles (1). The relationships among the parts are not clearly depicted. The denticles of A and B (1, shown in black), are wrapped by a thin, second denticle-like pair (2, stippled) which are probably apophyses of the triangular plate (cf. Scheltema, 1972, fig. 1). The cone (4) is slightly wider in lateral than in frontal view and scarcely curved; the lateral membranes (3) lie outside the buccal mass, and are thickest where shown by stippling.

μm . Cone length 90 μm , frontal width 25 μm , lateral width 35 μm . Lateral membranes 55 μm long, positioned less than halfway down cone. Accessory structures were not clearly seen except for the triangular plate, which like the denticles is relatively large, and one pair of its apophyses.

Related species: *Falcidens poias* is most closely related to *F. lipuros* Scheltema from Bass Strait in general spicule and oral shield shape and in lack of distinctive anterior and posterior trunk regions (Scheltema, 1989). However, the spicules of *F. lipuros* are more elongate and often bear sculpturing at the waist, and the body is tapered posteriorly. The radulae of the two species are dissimilar.

Habitat: *Falcidens poias* was collected from amongst the rhizomes of the seagrass *Posidonia sinuosa* at densities of about 50 m^{-2} .

Discussion

Recent collections from Australia show that the aplacophoran fauna of the continental shelf is both diverse and abundant. In Bass Strait, species either have been or are in the process of being described (Scheltema, 1989, in press a, b; Salvini-Plawen, 1992). One species of Chaetodermatidae in Bass Strait, *Lepoderma chiastos* (Scheltema), occurs at high densities, up to 180 m^{-2} (Scheltema, 1989); *Falcidens (Lepoderma) targotegulatus* Salvini-Plawen (1992) is considered a synonym (Scheltema, in press b).

That a species of *Falcidens* has been found to occur at such shallow depths as 3 m and in warm surface waters is unusual, for this genus is normally found in cold temperate waters and often at upper slope depths. The accessibility of *F. poias* in relatively large numbers at easy collecting depths opens the possibility for behavioral and physiological studies of an aplacophoran, a group for which few such data are available.

Acknowledgements

Two specimens of this new species were sent to me by Graham Edgar, for which I thank him.

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